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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/921;703	08/06/2001	Takahiro Fuchigami	016907/1246	8140

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EXAMINER

THOMPSON, JAMES A

ART UNIT	PAPER NUMBER
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2625

DATE MAILED: 12/08/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 09/921,703	Applicant(s) FUCHIGAMI ET AL.	
	Examiner James A. Thompson	Art Unit 2625	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 25 September 2006.
2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☐ Claim(s) _____ is/are pending in the application.
4a) Of the above claim(s) _____ is/are withdrawn from consideration.
5) ☐ Claim(s) _____ is/are allowed.
6) ☒ Claim(s) 1-12, 21 and 22 is/are rejected.
7) ☐ Claim(s) _____ is/are objected to.
8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
10) ☒ The drawing(s) filed on 11 October 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION***Response to Arguments***

1. Applicant's arguments filed 25 September 2006 have been fully considered but they are not persuasive. While Yamanishi (US Patent 5,724,444) does operate with respect to density histograms, these histograms are used to correct input image data. The background [DW (see figure 5a of Yamanishi) since there is a white background) is used in correcting the density level for each pixel density (column 5, lines 23-40 of Yamanishi). Through this process, the density of each pixel of the first image is replaced with corrected density data of at least one color component with data outputted from the character density averaging section (column 5, lines 14-40 of Yamanishi – densities at peak N in figure 5a of Yamanishi are replaced with densities in narrower range of peak near “THICK” end in figure 5b of Yamanishi). Thus, Yamanishi does generate second image data by replacing first image data in the manner recited in claims 1, 21 and 22.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. **Claims 1-7, 9-12 and 21-22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ohta (US Patent 6,549,657 B2) in view of Yamanishi (US Patent 5,724,444).**

Regarding claims 1, 21 and 22: Ohta discloses an image processing apparatus (third embodiment) (figure 8 and column 9, lines 32-34 of Ohta) comprising a controller unit (figure 8(102) of Ohta) which generates first image data (column 5, lines 7-11 of Ohta) and first discrimination data (column 10, lines 20-27 of Ohta) representing attributes of each pixel of the first image data, on the basis of information described in a page description language (column 5, lines 7-11 of Ohta); a discrimination data generating unit (figure 8(104(portion)) and column 5, lines 18-21 of Ohta) which generates second discrimination data (icode information) different from the first discrimination data (figure 11 and column 5, lines 12-18 of Ohta), using the first image data (column 10, lines 21-22 of Ohta) and the first discrimination data generated by the controller unit (column 10, lines 20-27 of Ohta); an image data generating unit

(figure 8(104(portion)) and column 5, lines 18-21 of Ohta) which generates second image data (CMYK) (column 9, lines 47-52 of Ohta) by correcting the first image data generated by the controller unit on the basis of the second discrimination data generated by the discrimination data generating unit (column 10, lines 43-55 of Ohta); an image processing unit (figure 8(104(portion)) and column 5, lines 18-21 of Ohta) which subjects the second image data generated by the image data generating unit to a predetermined process on the basis of the second discrimination data generated by the discrimination data generating unit (column 8, lines 48-55 and column 11, lines 1-9 of Ohta); and an image output unit (figure 8(413) of Ohta) which outputs image data processed by the image processing unit (column 8, line 65 to column 9, line 2 of Ohta). Ohta further discloses that the first image data is color image data comprising plural color components (column 9, lines 35-43 of Ohta).

The CPU (figure 8(104) of Ohta) performs the image processing program and control (column 5, lines 18-21 of Ohta). Thus, the discrimination data generating unit, image data generating unit, and image processing unit are each respective portions of the physically embodied software, which is executed by said CPU.

Ohta does not disclose expressly that the image data generating unit has a background density averaging section and a character density averaging section, where at least one color component is associated with a character or a line figure, the image data generating unit generates second image data by replacing the first image data other than said at least one color component with data outputted from the background density averaging section, and by replacing the first image data of said at least one color component with data outputted from the character density averaging section.

Yamanishi discloses a background density averaging section and a character density averaging section (figure 3 of Yamanishi, which would correspond to portions of physically-embodied software executed by the CPU when combined with Ohta), where at least one color component is associated with a character or a line figure (column 5, lines 14-22 of Yamanishi), the image data generating unit generates second image data by replacing the first image data other than said at least one color component with data outputted from the background density averaging section, and by replacing the first image data of said at least one color component with data outputted from the character density averaging section (figure 5a; figure 5b; and column 5, lines 23-40 of Yamanishi).

Ohta and Yamanishi are combinable because they are from the same field of endeavor, namely the correction and processing of digital document data. At the time of the invention, it would have been obvious to a person of ordinary skill in the art to include the background color and character color determination and correction operations taught by Yamanishi in the physically-embodied software used

Art Unit: 2625

by Ohta for digital document image data processing. The motivation for doing so would have been to improve the overall image processing by adjusting the density of the pixels according to a calculated histogram (column 1, lines 35-47 of Yamanishi). Therefore, it would have been obvious to combine Yamanishi with Ohta to obtain the invention as specified in claims 1, 21 and 22.

Further regarding claim 1: The controller unit of claim 21 corresponds to the image development means of claim 1. The other units of claim 21 correspond to the similarly-named means of claim 1.

Further regarding claim 22: The method of claim 22 is performed by the apparatus of claim 21.

Regarding claim 2: Ohta discloses that said image development means generates first discrimination data (W,TH) that discriminates whether each pixel is associated with a character, or a line figure described by a straight line and a curve (column 10, lines 35-42 of Ohta).

Regarding claim 3: Ohta discloses that said discrimination data generating means generates second discrimination data (masking conversion switching) that does not discriminate whether each pixel is associated with a character, or a line figure described by a straight line and a curve, using the first image data generated by the image development means (column 9, line 66 to column 10, line 14 of Ohta).

Regarding claim 4: Ohta discloses that the image development means generates first discrimination data (masking conversion switching) that does not discriminate whether each pixel is associated with a line figure described by a straight line and a curve, or a plane figure, the entirety or each component of which is painted out with uniform density (column 9, line 66 to column 10, line 14 of Ohta).

Regarding claim 5: Ohta discloses that the discrimination data generating means generates second discrimination data (W,TH) that discriminates whether each pixel is associated with a line figure described by a straight line and a curve, or a plane figure, the entirety or each component of which is painted out with uniform density, using the first image data generated by the image development means (column 10, lines 35-40 of Ohta).

Regarding claim 6: Ohta discloses that the image development means generates first discrimination data (masking conversion switching) that does not discriminate between a contour portion and an inside portion of a plane figure painted out with uniform density (column 9, line 66 to column 10, line 14 of Ohta).

Regarding claim 7: Ohta discloses that the discrimination data generating means generates second discrimination data (W,TH) that discriminates between a contour portion and an inside portion of a plane figure painted out with uniform density, using the first image data generated by the image development means (column 10, lines 35-40 of Ohta).

Regarding claim 9: Ohta discloses that the discrimination data generating means generates second discrimination data (masking conversion switching) that does not discriminate between a plane figure painted out with uniform density and a tone image, using the first image data generated by the image development means (column 9, line 66 to column 10, line 14 of Ohta).

Regarding claim 10: Ohta discloses that the image development means generates first discrimination data that discriminates that each pixel is associated with a tone image (column 10, lines 23-27 of Ohta).

Regarding claim 11: Ohta discloses that the discrimination data generating means generates second discrimination data that discriminates the magnitude of density variation in each pixel, using the first image data generated by the image development means (column 10, lines 35-42 of Ohta).

Regarding claim 12: Ohta discloses that the discrimination data generating means generates, when the first image data generated by the image development means is color image data comprising plural color components (column 9, lines 38-43 of Ohta), second discrimination data (icode) which represents attributes of each pixel for each color component and is difference from the first discrimination data, using the color image data (column 10, lines 28-42 of Ohta).

4. Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ohta (US Patent 6,549,657 B2) in view of Yamanishi (US Patent 5,724,444) and Uekusa (US Patent Application Publication 2001/0013953 A1).

Regarding claim 8: Ohta in view of Yamanishi does not disclose expressly that said image development means generates first discrimination data that discriminates between a plane figure painted out with uniform density and a tone image.

Uekusa discloses generating first discrimination data that discriminates between a plane figure painted out with uniform density (figure 3(S220) of Uekusa) and a tone image (figure 3(230) of Uekusa) (figure 8; para 0108; and para 0112 of Uekusa).

Ohta in view of Yamanishi is combinable with Uekusa because they are from the same field of endeavor, namely the correction of digital document data based on calculated histograms. At the time of the invention, it would have been obvious to a person of ordinary skill in the art to discriminate between uniform density figures and tone images in a digital document image, as taught by Uekusa. The suggestion for doing so would have been that both Uekusa and Yamanishi discriminate image portions and correct the different image portions based on histogram data. Furthermore, the motivation one of ordinary skill in the art at the time of the invention would have had to combine the reference is that the

Art Unit: 2625

teachings of Uekusa correct for discontinuities that can occur as a result of the separate processing performed according to methods such as that taught by the combination of Ohta in view of Yamanishi (para. 0110-0112 of Uekusa). There-fore, it would have been obvious to combine Uekusa with Ohta in view of Yamanishi to obtain the invention as specified in claim 8.

Conclusion

5. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to James A. Thompson whose telephone number is 571-272-7441. The examiner can normally be reached on 8:30AM-5:00PM.

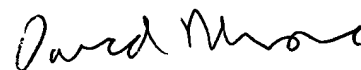
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David K. Moore can be reached on 571-272-7437. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



29 November 2006

James A. Thompson
Examiner
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